

What is claimed is:

1. A method of providing search results in response to an ambiguous search query, the ambiguous search query consisting of a sequence of ambiguous information components:
 - receiving a sequence of ambiguous information components from a user;
 - 5 obtaining mapping information that maps the ambiguous information components to less ambiguous information components;
 - using the mapping information to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components;
 - 10 providing one or more of the sequences of less ambiguous information as an input to a search engine;
 - obtaining search results from the search engine; and
 - presenting the search results to the user.
2. The method of claim 1, wherein the mapping information is based on the
15 configuration of a standard telephone keypad.
3. The method of claim 2, wherein the ambiguous information components comprise numbers and the less ambiguous information components comprise letters.
4. The method of claim 1, wherein each of the ambiguous information components
20 comprises a single press of a key and the less ambiguous information comprises letters that correspond to the key.
5. The method of claim 1, wherein the ambiguous information components comprise phonemes.
6. The method of claim 5, wherein the less ambiguous information components
comprise alphanumeric information.
- 25 7. The method of claim 1, wherein the ambiguous information components comprise visual information.
8. The method of claim 1, wherein the act of using comprises using the mapping information in combination with a lexicon to translate the sequence of ambiguous information

components into one or more corresponding sequences of less ambiguous information components.

9. The method of claim 8, wherein the lexicon is a dictionary.

10. The method of claim 8, wherein the lexicon is a list of sequences of less ambiguous information components that previously have been processed by the search engine.

11. The method of claim 1, wherein the act of providing comprises providing at least two sequences of less ambiguous information components to the search engine using a logical "OR" operation.

12. The method of claim 11, wherein the act of providing comprises:
10 determining a subset of the translated sequences of less ambiguous information components; and

providing the subset of translated sequences of less ambiguous information components as an input to a search engine.

13. The method of claim 12, wherein the act of determining comprises comparing the translated sequences of less ambiguous information components against a lexicon.

14. The method of claim 12, wherein the act of determining comprises comparing the translated sequences of less ambiguous information components against a search query log.

15. The method of claim 12, wherein the act of determining comprises using statistical information about the co-occurrence of the less ambiguous information components within the sequence.

16. A method of providing search results in response to an ambiguous search query, comprising:

receiving a sequence of information components from a user, each information component corresponding to a key press;

5 obtaining mapping information that maps the information components to other information components corresponding to the same key press;

using the mapping information to determine other sequences of information components;

10 providing one or more of the received sequence and the other sequences as an input to a search engine;

obtaining search results from the search engine; and

presenting the search results to the user.

17. The method of claim 16, wherein the mapping information is based on the configuration of a standard telephone keypad.

15 18. The method of claim 17, wherein the received information components comprise numbers and the other information components comprise letters.

19. The method of claim 17, wherein both the received and other information components comprise letters.

20. The method of claim 16, wherein the act of providing comprises providing at least
20 two sequences to the search engine using a logical "OR" operations.

21. A method of providing search results to a user in response to an ambiguous search query, comprising:

receiving a string of numbers;

translating the string of numbers into a plurality of letter strings based on mapping

5 information;

providing at least one of the letter strings as a search query to a search engine;

obtaining search results from the search engine in response to the search query; and

presenting the search results to a user.

22. The method of claim 21, wherein the mapping information is based on a standard

10 telephone keypad.

23. The method of claim 21, wherein the act of providing comprises providing at least two of the letter strings as a search query to a search engine using a logical “OR” operation.

[illegible]

26. A method of providing search results to a user in response to an ambiguous search query, comprising:

receiving at least two number words constituting a number phrase;

translating each number word into one or more letter words based on mapping

5 information;

forming one or more letter phrases that correspond to the number phrase;

providing at least one of the letter phrases as a search query to a search engine;

obtaining search results from the search engine in response to the search query; and

providing the search results to a user.

10 27. The method of claim 26, wherein the providing step comprises providing at least two of the letter phrases as a search query to a search engine using a logical "OR" operation.

28. The method of claim 26, wherein the mapping information is based on a standard telephone keypad.

29. A method of providing search results in response to an ambiguous search query received from a client device, the ambiguous search query consisting of a sequence of ambiguous information components:

receiving at a server device a sequence of ambiguous information components from
5 a client device;

obtaining at the server device mapping information that maps the ambiguous information components to less ambiguous information components;

using the mapping information in combination with a dictionary to translate, at the server device, the sequence of ambiguous information components into one or more
10 corresponding sequences of less ambiguous information components.

US 2017/0144441 A1

31. An apparatus for providing search results in response to an ambiguous search query, the ambiguous search query consisting of a sequence of ambiguous information components, comprising:

at least one memory having program instructions, and

5 at least one processor configured to execute the program instructions to perform the operations of:

receiving a sequence of ambiguous information components from a user;

obtaining mapping information that maps the ambiguous information components to less ambiguous information components;

10 using the mapping information to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components;

providing one or more of the sequences of less ambiguous information as an input to a search engine;

15 obtaining search results from the search engine; and
presenting the search results to the user.

